Name: _____ Class: _____ Date: _____ ID: A

Lesson #2 C: Understanding and Solving Systems of Equations: Applications of Systems of Equations (Reference: Lesson #15, #21 & #24 in book)

Problem

1. **For each of the following application word problems, please create two equations from the given information and then solve the system of equations using the method of your choice. (SHOW ALL OF YOUR WORK.)**

   1. Jill has $20 in her savings account and plans to deposit $5 each week. Jose has $5 in his account and plans to deposit $10 each week. After how many weeks will they have the same amount of money in their accounts? What is that amount?

2. Beau and Celine decide to rent bikes. There are two shops from which to choose. Rent-a-Bike charges $10 per hour per bike, with no deposit per bike. Bike-o-Rama charges only $5 per hour per bike, but with a deposit of $15 per bike. At what number of hours will both shops charge the same amount? What is that amount?

3. The cost of a cell phone bill includes the monthly fee plus the charge per minute for every minute per month. The charge for 500 minutes is $80. The charge for 1350 minutes is $131. How much is the monthly fee and how much is the charge per minute?

4. A school play charged adults $8 and students $5 for tickets. There were 75 people who attended the play. The box office collected $444. How many adults and how many students attended the play?

5. For the muscial production of The Wizard of Oz playing at the Ford Center in Chicago, orchestra (main floor) seats cost $148, while the best balcony tickets cost $65. Suppose that the members of a club spent a total of $2,614 for 30 tickets to the musical. How many tickest of each kind did they buy?

6. Carlos has 32 Buffalo nickels, some with dates and some without dates. Buffalo nickels without dates are worth $0.15, and dated Buffalo nickels are worth $0.75. If Carlos's collection of Buffalo nickels is worth $10.80, how many of the coins have dates on them?

7. The senior classes at High School A and High School B planned separate trips to New York City. The senior class at High School A rented and filled 1 van and 6 buses with 372 students. High School B rented and filled 4 vans and 12 buses with 780 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

8. Matt and Mandi are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Matt sold 3 small boxes of oranges and 14 large boxes of oranges for a total of $203. Ming sold 11 small boxes of oranges and 11 large boxes of oranges for a total of $220. Find the cost each of one small box of oranges and one large box of oranges.

9. Ilida went to Minewaska Sate Park one day this summer. All of the people at the park were either hiking or bike riding. There were 178 more hikers than bike riders. If there were a total of 676 people at the park, how many were hiking and how many were riding their bikes?

10. Margie is responsible for buying a weeks supply of food and medication for the dogs and cats at a local shelter. The food and medication for each dog costs twice as much as those supplies for a cat. She needs to feed 164 cats and 24 dogs. Her budget is $4,240. How much can Margie spend on each dog and cat for food and medication?